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SOME OBSERVATIONS ON THE ORGANIZATION, FUNCTIONS, AND ACTIVITIES OF THE DIVISION OF COTTON MARKETING

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1935-36

Extension Studies and Teaching Section

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F O R E W O R D

In this circular the author, himself a county agricultural agent, is attempting to bring to other county agents a review of the organization, functions, and activities of that Federal agency concerned with the marketing and utilization of cotton.

In connection with his work as a National 4-H Club Fellow, the author studied at close range the organization of the Division of Cotton Marketing, Bureau of Agricultural Economics, and obtained directly from those in key positions first-hand knowledge of the functions performed and the services rendered the cotton industry. Though the manuscript has been checked by the Division of Cotton Marketing for accuracy of statement, the arrangement of material, the emphasis placed upon the various functions and activities, and the point of view presented are entirely that of the author.

The information presented should be of direct interest to extension workers located in areas where the production and marketing of cotton is a major farm enterprise.

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This opportunity was made possible through the courtesy of Dr. A. G. Black, Chief of the Bureau of Agricultural Economics, and Mr. A. W. Palmer, former Chief of the Division of Cotton Marketing.

The author appreciates the opportunity afforded to become acquainted with those responsible for directing the work of the Division, and is grateful not only for the large amount of time given to personal conferences, but also for the criticisms and helpful suggestions made relative to the preparation of the paper. To Mr. W. B. Lanham, an official of the Division, the author is especially grateful for help in directing the study and in contacting the other officials of the Division prior to the conferences with them.

DISTRIBUTION: A copy of this circular has been sent to each State extension director; to each State and assistant State leader in county agent work, county agricultural agent, State and assistant State leader in club work, and agronomy specialist in the cotton-producing States; and to each agricultural-college library and experiment-station library.

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INTRODUCTION

The Division of Cotton Marketing is one of the six commodity divisions of the Bureau of Agricultural Economics. This is the only division that deals entirely with cotton and its joint product, cottonseed.

The functions of the Division include a number of research, service, and regulatory activities. The Division possesses a personnel highly trained and specialized for its particular responsibilities. The service and regulatory duties are mandated either to the Department or to the Bureau of Agricultural Economics by various acts of Congress, and the researches are also authorized by Congress, but in somewhat more general terms.

Research is not restricted, however, to problems encountered in the administration of service and regulatory laws. An extended series of studies has been made of the prices paid to farmers, particularly in relation to the qualities of their cotton and to central market prices, and of the effect of prices paid to farmers upon incentives to improve or sustain the quality of cotton products. The Division also studies market organization and marketing costs, from which there is being built up a body of information fundamental to improvements in the system of cotton marketing. A series of studies is under way on the utilization of cotton and the trends in utilization, with reference particularly to present and potential demand and to opportunities for increasing cotton consumption. Conservation of quality of cotton through better ginning is also under study at the United States Cotton Ginning and Fiber Laboratories at Stoneville, Miss., the work of which is carried on jointly by the Bureau of Agricultural Engineering and the Bureau of Agricultural Economics. Their studies of cotton quality were undertaken originally to supply information needed in standardization, but the results were found to have a much wider application. Results have proved to be the key to the study of ginning technique, and are now used extensively in the Bureau of Plant Industry and in a number of State experiment stations in studies looking to improvement of varieties and cultural methods.

The principal service functions of the Division are the preparation and distribution of the official cotton standards of the United States; the classification of cotton; cotton market news and quotation service; and the collection and dissemination of grade and staple statistics.

During the fiscal year ended June 30, 1920, the various projects of the Bureau, then known as the Bureau of Markets, were grouped into divisions. The Division of Cotton Marketing was formed on July 7, 1919, when the following projects were brought together under one leadership:

Enforcement of the United States Cotton
Futures Act.

Investigation and demonstration of cotton standards.

Cotton testing.

Cotton handling and marketing.

Marketing cottonseed and its products.

The original Cotton Futures Act of 1914 was declared unconstitutional, because it was a revenue-raising measure and had originated in the United States Senate instead of the House of Representatives. To overcome this situation, the present act was passed on August 11, 1916. This was a reenactment of the 1914 measure with certain modifications. It has been amended in certain important respects since its passage in 1916.

The work of the Division of Cotton Marketing was limited in its earlier years mainly to the preparation and distribution of copies of the official cotton standards, the supervision of the quotations in markets designated as bona-fide spot markets under the Cotton Futures Act, the classification of cotton when involved in dispute as to quality in connection with deliveries on futures contracts, certain work on cotton testing (spinning tests), and studies in handling and marketing.

In 1919 the Cotton Futures Act was amended. The new act provided that all cotton actually delivered in settlement of futures contracts must be classed by Government classers. Prior to 1919 no cotton was required to be so classed except in case of dispute over its grade or staple. The 1919 amendment also fixed minimum requirements for grade and staple of cotton that could be tendered on futures contracts. The 1919 amendment was important to farmers also because it included the authority for the Market News Service, which is closely associated with the quotations in the designated spot markets.

On March 4, 1923, the Cotton Standards Act was passed. This act made the use of official standards compulsory in all spot transactions based on standard descriptions. This was the outstanding part of the act. Immediately the question of cooperation between the United States and Europe arose. The Universal Standards were agreed upon in the summer of 1923 by the Secretary of Agriculture and the nine leading cotton organizations of Europe. The European organizations, of which that at Liverpool is the largest, adopted the American standards as slightly modified at that time. Universal Standards apply only to grade - not to staple length. The International Cotton Conference meets in Washington every 3 years for the purpose of approving the key sets put up to match the standards. No revision can be made without formal notice a year or more previous to their effective date. Key sets are approved by the group, for use during the next 3-year period; additional sets are manufactured for sale to the public. Both the grade and the staple standards of the United States Department of Agriculture are now used throughout the world. Further discussion of the standards is given on the following page.

Transactions on the basis of private types do not require the use of standards. Cotton may also be sold according to the actual sample taken from the bale.

The Cotton Standards Act also provides that any person may have his cotton classified by officials of the Department. The same boards of examiners are authorized to class under the Cotton Futures Act and under the Cotton Standards Act.

In 1928 there were only 56 licensed classers, but in 1935 more than 400 licenses were issued. More than 3 million bales have been classed during one season by these licensed classers.

The Grade and Staple Statistics Section and the cotton classers have made farmers more quality conscious, and have caused many of them to ask for the premium their cotton should have.

United States Cotton Futures Act

The Cotton Futures Act of 1914 came about as a result of many attempts by Congress to regulate futures trading. No less than one hundred bills had been introduced in Congress by Senators and Representatives prior to 1914 to correct apparent abuses in the futures markets. These abuses were said to arise from five conditions. (1) Different sets of standards of classification for use in conducting cotton business at each exchange, (2) fixed differences between values of grades used in the settlement of exchange contracts, (3) delivery upon exchange contracts of low-grade or inferior cotton, much of which could not be used by the spinner, (4) failure of tenders of cotton on exchange contracts to show the grades to be delivered, and (5) so-called "pro forma" delivery practice, under which long periods of time often elapsed before the person obligated by an exchange contract to receive cotton was informed of the grades, although he had been forced through the exchange rules to pay for it at the time fixed for delivery by the other party to the contract. The quotation of futures prices from the exchanges had a very material effect upon prices received by the growers, because the trade had adopted the practice of basing prices for spot cotton in the interior upon the quotations of these exchanges. Investigations disclosed that rules which had grown up around the exchanges had been formulated to a considerable extent for the convenience of futures trading as such, and with possibly too little attention to spot-cotton interests, and that, as a result, they did not provide suitable "hedges" for spot-cotton transactions or proper quotations on which to base the value of American cotton at interior points.

After much consideration and discussion, the effort to improve conditions was crystallized in the enactment of the United States Cotton Futures Act. The legislation provided that a single set of standards for cotton should be promulgated, of which practical forms should be made and offered for distribution to the public at nominal cost. The Secretary of Agriculture was authorized and directed to establish such standards, and

to prepare and distribute the practical forms. The five faults previously mentioned were all taken under consideration in the act. It was hoped that the act would make the futures quotations stay on a closer level with the spot quotations, so that the futures quotations could be used in the interior points as an aid in establishing fair prices for growers generally.

All cotton used to fill futures contracts must be certificated by Government classers. The method used to check the accuracy of the classers will be fully discussed in connection with grade and staple statistics.

Market News Service

The chief function of the Market News Service is to supply quotations and other cotton-marketing information to cotton growers and others. This information is given out in the form of a weekly Cotton Market Review and in other releases.

The Review treats upon the following market factors: Cotton prices, spot sales, exports, cloth markets, and weather conditions. Other factors are also given consideration from week to week. Each of these factors is discussed in a single paragraph. Any changes that may have a direct influence upon the cotton market are considered. By studying these weekly reports, a person has the most concise and dependable market news service available for his guidance; but a widely distributed daily report is needed.

A producer can, by using the Cotton Market Review, Market News Service, and the Government classing service, tell approximately what his bale of cotton should sell for. The grade and staple premium discounts and additions are given in the Market News. These premiums can easily add $5 or more to the sale price of a quality bale of cotton; however, they frequently are lost, largely because the producers are too anxious to sell. Cotton is often sold to a buyer who buys high- and low-quality cotton at the same price, and it takes the high-quality cotton to balance the poor-quality bought. This is good for the producers of poor cotton, but it is unfair to the producers of higher quality cotton.

A closer tie-up between the classing service and the Market News Service is badly needed. Both need expanding. The only way to get farmers interested in producing higher quality cotton is to pay them for it on a premium basis. Much too small a proportion of the cotton crop is marketed according to quality by producers. Farmers need more of their cotton classed, and then they need market information so that they can figure their own premiums. An educational program will be helpful. The machinery for this program is already in operation in the form of county agricultural councils. These councils could easily include a study of cotton marketing. The community organizations could take the information directly to the farmers. It is suggested that a series of programs on the subject of cotton marketing be prepared and distributed to these county and community farm organizations. The local extension agents should know of the program, if they are to be instrumental in

putting it across. Probably nothing could be of more value to the South than a cotton market available to farmers that is based solely on quality and Government standards.

COTTON STANDARDS

In 1908, the late Dr. N. A. Cobb was asked to make up the first set of official standards. In 1909, the first standards were set up by a committee that Dr. Cobb supervised. At that time this work was handled by the Bureau of Plant Industry. These first standards were called permissive standards. At that time, each exchange had its own set of standards, and they differed widely in respect to the different grades.

Standards work is based upon many years of experiment and research. Much of the present research work in the Division is based upon standards research; for example, the quality research, grade and staple estimate work, and cotton-marketing research.

With the passage of the Futures Act in 1914, the standards were revised. In 1916 standards were set up to include the tinges and blues. A conference was held in 1922 again to consider the revision of the standards, and in 1923 the first International Cotton Conference was held. The Universal Standards were the outgrowth. The stains and tinges were lightened in color as were also the white grades. These standards were then adopted as the Universal Standards, and since 1923 they have been the basis for international cotton trading for American upland cotton.

Standards were adopted for American-Egyptian and sea-island cottons in 1917 and 1918, but the sea-island standards were dropped in 1925 because of low production. The American-Egyptian standards are still in use. The many improvements in American-Egyptian cotton led to the improved variety known today as Pima. These standards are for five grades and four staple lengths, represented by official types.

In recent years it has been very hard to match the Universal Standards, due to change in the color of the cotton crop. The present standards became effective in 1924, but new ones, more representive of the crop, were promulgated August 20, 1935, to become effective August 20, 1936. Every 2 years since 1925, with the exception of 1935, an International Cotton Conference has been held in Washington. Such a conference was held in 1936, at which time copies of the new standards were passed upon. The next conference will be held in 1939.

In preparation for the next conference, there are always held a first and second reserve set of the Universal Standards to be used in the preparation of the next series of key sets. One set is locked in the United States Treasury vaults and the other in the vaults of the Division of Cotton Marketing. Previous to the conference, the employees of the Division prepare a number of boxes for each grade of the standard by

comparing them to a third or working set removed from the Cotton Division's vaults.

Great care is taken to see that every box of the same grade is exactly like every other box. After the committee passes on a box of standards, the box is photographed, for each sample has a very definite place in the box and the photograph will show if anything ever happens to the samples. The seal of the Secretary of Agriculture is placed on the approved boxes.

To insure the accuracy and integrity of the official cotton standards, the Department of Agriculture is continually carrying on research intended to keep the standards up to date. In 1933, the United States Department of Agriculture undertook a study with a view to possible revision of the grade standards. The new standards that have been accepted have a tendency to lean toward whiter cottons that more accurately cover the crops actually produced than did the former standards. Instead of having a physical standard for extra white there will be descriptive grades for extra white. Tinges have been lightened, yellow stains are entirely descriptive grades, and blue stains are entirely eliminated. Middling Fair has been made into a descriptive grade.

Cotton classers have found that good daylight is absolutely essential to good classing. The classing or standards preparation room in the Division of Cotton Marketing is considered one of the best classing rooms in the world. North light is used in this room, and even on cloudy days the light is excellent.

There are several factors which affect the quality of cotton samples. They are: Color, trash, and preparation of the sample or the ginning preparation - all are considered in the preparation of cotton standards. Quality in staple is measured by the length and fineness of the fibers and uniformity of the fiber length.

Staple standards in physical form have been developed for various staple lengths from 3/4 of an inch to 1-1/2 inches for American upland cotton. The lengths of upland cotton so represented are 20 in number, and for the most part are in steps of 1/32 of an inch. Physical representations have been established also for four lengths of American-Egyptian cotton - 1-1/2, 1-9/16, 1-5/8, and 1-3/4 inches, respectively. These standards are approved by a classing committee just as are the standards for the grades. They are sold to anyone who may want them. The American staple standards are not adopted as universal, but at the same time they are used throughout the world. Much of the progress in cotton marketing is built around these cotton standards.

GRADE AND STAPLE STATISTICS

Statistics showing quality of cotton, based on grade and staple estimates of the crop and carry-over, have been prepared and issued each year since 1927. On March 3, 1927, Congress enacted legislation that directed the Secretary of Agriculture to make grade and staple estimates of cotton on hand at the beginning of each cotton year (August 1), and not less than three estimates of the grade and staple of the current crop. Funds were made available for the fiscal year beginning July 1, 1928, at which time the Bureau of Agricultural Economics began the work of assembling this information concerning the ensuing crop.

The cotton year beginning August 1 of that year, in which the crop of 1928 was produced, thus became the first year for which official statistics of this nature covering the entire Cotton Belt are available. Samples furnished from the crop of 1935 by cooperating gins throughout the Cotton Belt will form the basis of the eighth consecutive report on the quality of the crop; and the carry-over on August 1, 1935, is the eighth for which comparable quality figures are available. Inasmuch as the data are assembled according to States, and to general soil areas of the various States, a means is provided for comparing the quality of the cotton grown in one area with that grown in another; of cotton produced in a given area in a given year with that produced in other years; and of cotton carried over from year to year.

Need for Quality Report on Cotton

The legislation enacted on March 3, 1927, was the result of several years' effort on the part of those interested in obtaining facts concerning the quality of cotton in the carry-over. Many thousands of bales were being carried over each year, and it was rather generally believed that the quality of much of this cotton was considerably below the average for cotton produced - possibly too poor in quality to be desired by spinners. It was believed, further, that treating this entire carry-over as so much available cotton was unduly depressing prices. In an effort to ascertain the extent to which cotton of low quality was being carried over, Congress authorized the collection of statistics showing the quality not only of cotton carried over each year, but also of cotton ginned each year periodically throughout the ginning season.

The need for comprehensive and dependable information concerning the quality of American cotton had been emphasized from time to time. Certain foreign buyers had repeatedly complained that the quality of their purchases was falling below expectations based on purchases in former years, particularly in the matter of staple length. They pointed to increased cost of manufacture in justification of their complaints.

A variety of explanations resulted from efforts to place the responsibility for any deterioration in quality of American cotton that may have been taking place. There were differences of opinion as to the relative

importance of such factors as (1) the introduction of early-maturing short-staple varieties in order to escape boll-weevil damage; (2) faulty ginning; and (3) lack of interest on the part of growers who, not being paid for their cotton on the basis of difference in quality, gave little heed to the planting of improved varieties or to care in harvesting the crop and presenting it at the gin in proper condition. A body of dependable data was recognized as essential to any effective cotton-improvement program.

Organization

The activities of the grade and staple statistics section are carried on through a central office in Washington, D. C., and five regional, or field, offices located at Atlanta, Ga.; Memphis, Tenn.; and Dallas, Austin, and El Paso, Tex.

The Washington office handles matters of planning and general supervision and issues annually statistics showing the grade and staple of (1) cotton carried over in the United States on August 1; (2) cotton ginned weekly during the most active period of the ginning season; and (3) cotton ginned to specified dates during the ginning season in each of the principal cotton-producing States.

The regional offices handle the work of assembling and classing samples; pass the classing data for individual bales back to the ginners and growers; and issue weekly reports showing the proportions of the various grades and staples by general soil districts within each of the States.

Procedure

Crop data.- In order to make a study of the cotton produced in the different localities, each State has been divided, for statistical purposes, into general soil districts (figure 1). The boundaries of these districts have been modified only to the extent necessary to make them conform to the boundary lines of counties. This makes possible the use of an important statistical device - that of applying the grade and staple percentage distributions for samples from any given district to total ginnings for that district as reported by the Bureau of the Census.

Each year the Washington office notifies the regional office concerning the approximate number of samples that regional office will have funds to handle. It is then the duty of the regional office to determine how many gins will be needed to furnish these samples. A study of the number of bales handled by a gin over a period of years usually enables one to determine the number of samples that may be expected from that gin.

Several factors are taken into consideration before the gins are finally selected. A careful study of differences in climate, soil formation, varieties planted, cultural practices, and types of ginning machinery is made in order to procure samples that will adequately represent the cotton of different qualities, and particularly of different grades and staple lengths, grown in the various localities within the region. For a

district where the quality of the cotton has been uniform over a period of several years, one gin may give sufficient data. In districts of wide variation in quality of cotton produced, several gins may be required to insure a representative aggregate of samples. The scope of the inquiry as related to total active gins and to total ginnings for specified years is shown in table 1.

Table 1.-Number and percentage of active gins furnishing samples to be used for grade and staple estimates, and of ginnings represented by samples classed 1927-28 to 1934-35

Crop year	Gins furnishing samples		Bales represented by samples classed	
	Number	Percentage of total active gins	Number	Percentage of total ginnings
1927-28 /1 ...	113	5.32	123,172	5.74
1928-29.....	1,115	7.45	1,363,226	9.54
1929-30.....	784	5.27	1,012,285	6.96
1930-31.....	927	6.39	1,144,401	8.32
1931-32.....	800	5.65	1,034,860	6.22
1932-33.....	772	5.69	843,473	6.64
1933-34.....	685	5.13	743,317	5.87
1934-35.....	899	7.10	768,240	8.11

/1.-Survey made the first season, 1927-28, was limited to the State of Georgia and an area comprising 20 counties in Texas and 7 counties in Oklahoma.

The gins are tentatively located before the ginner is contacted. The regional office will define the different soil types within the region and will spot the areas of widest variations. The location of the various gins is given to the man who has charge of that subdivision. It is his duty to contact the ginners. The entire set-up is explained in detail to the ginner, and he can either accept or decline the invitation to cooperate with the Government in this work. If he accepts, an agreement is signed between the ginner and the Government. The cooperating ginner agrees to take a sample of about 4 ounces from each bale that he gins, the sample to be taken from about the center of the bale while it is still in the "press box." He is furnished sacks for collecting and mailing samples and serially numbered tags for identifying the samples, to which are attached cards on which the classing results can be recorded and mailed. If the ginner desires that the classing results be sent to the producer direct, he writes the producer's name and address in the space provided on this card.

When a mail sack of samples has been collected, the samples are forwarded to the regional office for classing. The cooperating ginner

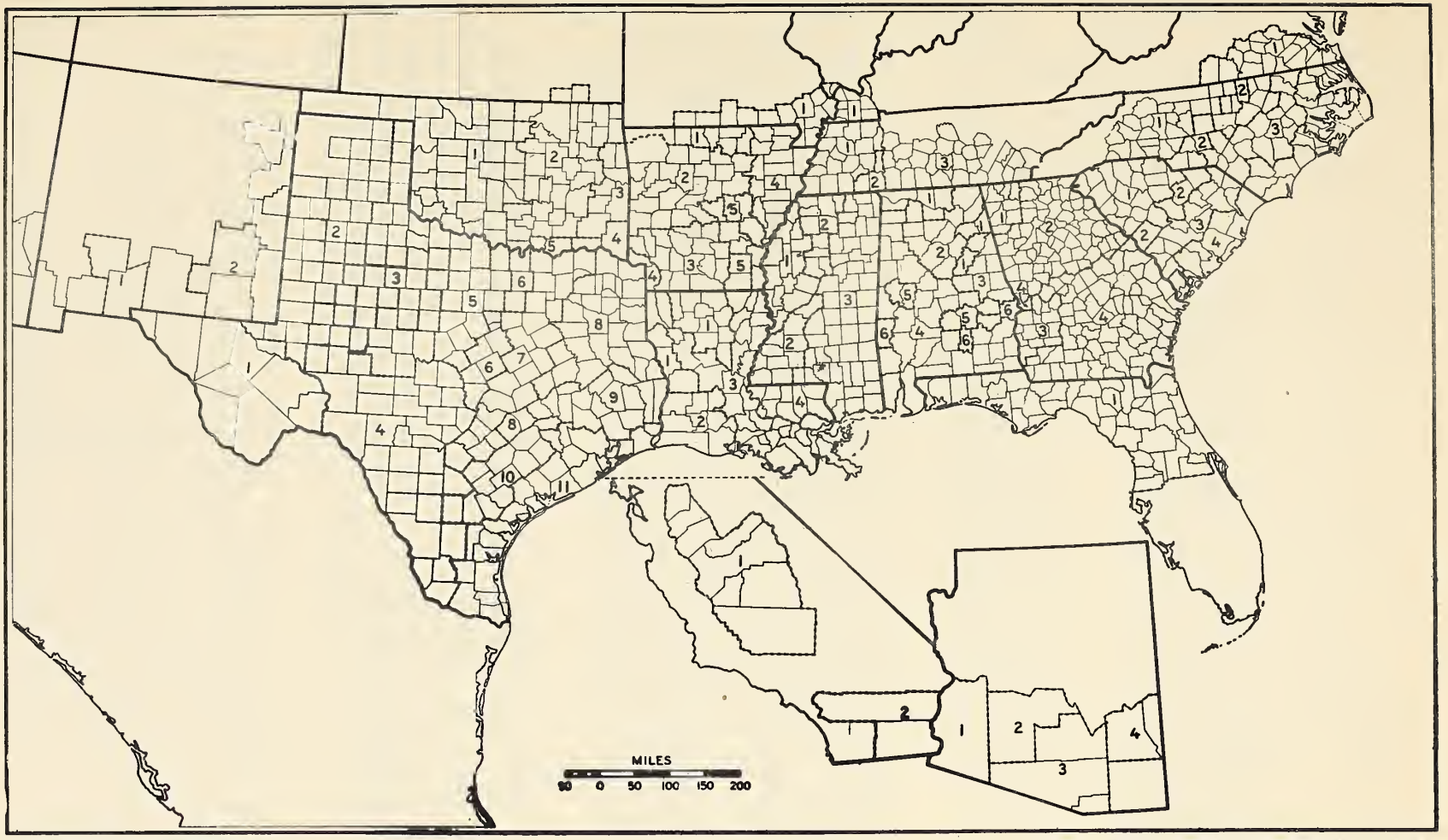

Figure 1.--Cotton-producing States divided into districts according to soils.

is not paid for furnishing samples. He is, however, furnished with the classification report for every sample sent in, including the report on preparation. This information on preparation is particularly valuable for checking faulty machinery and poor ginning practices.

If a ginner does not wish to cooperate, another ginner in the same locality is contacted. Most ginners are quite ready to cooperate. The ginner realizes that the information received is valuable both to him and to his customers. If, in addition to ginning, he buys and sells cotton but is not trained in classing, this information may enable him to sell to better advantage and, in turn, to offer his patrons better prices for the cotton he buys of them.

The field men visit the cooperating gins from time to time during the ginning season, to see that the samples are being taken correctly and to answer any questions that may be asked by the ginner or by farmers. These personal contacts make for closer cooperation between the two organizations. The gins are signed up during July and August.

In the regional offices the samples are classed by highly trained groups of classers. Each classer has passed the required Civil Service examinations and is a Government employee. The classing of samples must be both accurate and speedy, but the work is very closely checked. A sack of each classer's samples is sent in daily for this purpose to the Supervisory Board of Cotton Examiners at Memphis, Tenn. This board regrades the samples and sends its report to Washington, where it is compared with the classer's report from the field. This daily check encourages care and increases accuracy in classing. Government standards for both grade and staple are used, and all classifications are written down in code. This makes for speed in classing and lower cost in handling and transmitting the data.

Carry-over data.-It is more difficult to assemble adequate grade and staple information on the carry-over than on the crop. The crop passes into commercial channels by way of one common agency - the gin, where information concerning it may be had; whereas the carry-over "as of August 1" is on hand at the mills, warehouses, and compresses of the country or in the hands of cotton dealers and producers. Dependable information on the quality of the carry-over depends upon accurate grade and staple data covering a representative portion of this cotton.

The Bureau of the Census reports each year the number of bales of cotton on hand on August 1 at compresses, warehouses, mills, and elsewhere. Under "elsewhere" are grouped bales that cannot be located, including cotton on farms, in transit, or on shipboard. In order to assemble data concerning the quality of this cotton, a letter is sent to each mill late in July asking for the number of bales of each grade and staple on hand. The mills are asked also whether samples from this cotton are available. A similar letter is sent to the large cotton merchants and other dealers. A classer is sent out to check samples. He checks enough of them to determine whether or not the classifications are correctly made. If any are

found to be incorrect, the classer makes necessary corrections. In the case of warehouses having no samples available, the field man takes a sample from about every tenth bale. These samples are classed in the field office, and the resulting statistical factor is applied to all cotton held in the warehouse.

These figures from the various storage places for cotton are combined in making the carry-over report. It shows, as of August 1, the first day of the new cotton year, the approximate number of bales of each grade and each staple length on hand. Since the size and quality of the carry-over have much to do with the price of cotton, these reports are valuable to all those engaged in either growing, buying, selling, or processing cotton.

USES MADE OF GRADE AND STAPLE STATISTICS

Spinners, cotton merchants, and other buyers of American cotton find this information helpful to them. It enables them to know the approximate quantities of each grade and staple length available from the carry-over and from the crop as ginned, and to know, also, where the particular grades and staples required for their particular purposes may be had.

Ginners make use of the information in determining whether or not their machinery or ginning practices are in need of adjustment. If, in addition to ginning, they are buying and selling cotton, the grade and staple classifications for individual bales, sent them in return for their cooperation in furnishing samples, puts them in an advantageous position when selling, and enables them, in turn, to offer their patrons prices representing the true value of their bales.

Farmers who know the grade and staple of their bales of cotton are able to use this information to advantage when selling it. They are better able to judge whether or not they are planting the varieties best suited to their requirements from the standpoint of net returns. This information should be of considerable value also in connection with problems having to do with harvesting and handling of seed cotton and its condition when brought to the gin.

Cotton breeders and others interested in improving the quality of American cotton find the grade and staple statistics a valuable means of measuring differences in quality and of recording progress made. The figures now available, covering the crops of 1928 to 1935, indicate an increase during that period of about 1/32 of an inch in average staple length.

RECOMMENDATIONS

Farmers should be brought to a realization of the importance to them of accurate information concerning the quality of their cotton. The larger producers have been selling by grade and staple for years, but only a small percentage of all producers are fully aware of the need for classification or of the advantages in their knowing the value of the individual bales they have for sale. An educational program is suggested. It seems appropriate to suggest that the Division of Cotton Marketing and the Extension Service might render a very helpful service by cooperating in such an educational program.

The use of codes in sending the classing results to the ginners should be modified if possible. Inasmuch as ginners are often too busy to decode the classifications, many farmers who would benefit by them are unable to do so. For best results, the practice of sending this information direct to the producers, a service started in 1935, should be extended. This service should, as soon as possible, be extended to all those producers who are ginning their cotton at cooperating gins.

Whether it is received directly or indirectly, this information should be more promptly available to cotton growers, even if this necessitates the establishment of subdistrict offices at several points in the Cotton Belt, and their maintenance during the busiest period of the ginning season. Many farmers are forced to sell their cotton within a few days after ginning, and any information that is useful to them in obtaining prices based on quality must reach them more promptly than is possible at present.

The reports on grade and staple of cotton and those of the market-news service should be more closely associated. With the market report showing premiums offered for the higher grades and the longer staples, for example, the grower of cotton can make best use of the classing information concerning his individual bales.

COTTON UTILITY AND STANDARDS RESEARCH

The chief objectives of the cotton utility and standards research section are: To assist the section that prepares and distributes the official cotton standards in maintaining the stability of the official types; to study quality in terms of fiber properties in order to improve the usefulness of the standards, to lay a basis for the breeding and production of more desirable varieties; to discover ways of retaining the useful properties of cotton fiber without damage or modification during the process of ginning; and to study fiber characteristics of American cotton and their relation to quality.

There are many factors that have to do with quality on which there is at present little or no available knowledge. The research so far conducted has brought forth many additional unanswered questions that appear to have much to do with quality. Figure 2 shows the various studies now being undertaken on cotton qualities, and gives some idea as to the many problems involved. The need for research in cotton quality has been brought about because of demands by spinners and manufacturers of cotton goods for certain qualities in raw cotton. However, quality is a composite of many properties, and no one has ever been able to develop a method by which quality as a whole can easily be foretold, for there are too many factors to be considered in connection with the use that is to be made of the product. At present many of the factors responsible for quality are probably unknown, and others are not sufficiently understood. It will probably never be possible to have a single measure for quality.

Cotton research work, which has been carried on under authority of Congress, has developed along several lines grouped around ginning, fiber-properties spinning tests, manufacture of yarn, and fabric analyses. The fiber studies have been carried on by using cotton fiber-length sorters, microbalances, testers, the microscope, and ultramicroscopic technique. Furthermore, photomicrographic technique, polarized light, X-rays, and chemical methods have been drawn upon. By the use of these various methods, it appears that the fibers are composed of very small particles of cellulose joined end to end in an orderly manner, and held together by a cementing substance. Different treatments do not affect the two substances in the same manner. When the cementing material is partially dissolved, the fibrillar chains become loosened in their attachment to each other. Now, if freed at the end, they will spring out, tending to straighten and take up a position more nearly parallel to the axis of the fiber.

A method and instruments have been devised for measuring the color of the standards. This is important because in the past it has been an almost impossible task to keep the original standards from fading or bleaching in color. The measurement is an accurate record. Results of color measurements on the same or similar instruments are being used to give the grade or quality of the sample.

Considerable work has been done on fiber length. The variation of the fiber lengths within a small sample is very great. The fibers found in a sample of 1-inch staple will vary from 1-1/2 inches down to a very short fuzz. These studies have not only suggested new, more definite, and more refined methods for determining and specifying staple length, but have also brought to light the extent and diversity of fiber-length variability in the fiber mass.

In addition to the properties referred to above, a number of other properties generally referred to under the term "character" are being either measured or studied. Character includes such properties as fiber fineness, fiber maturity, strength, viscosity of the cellulose in cuprammonium reagent, convolution interval, and the like. Also, ginning studies are being conducted by the cotton utility and standards research section in

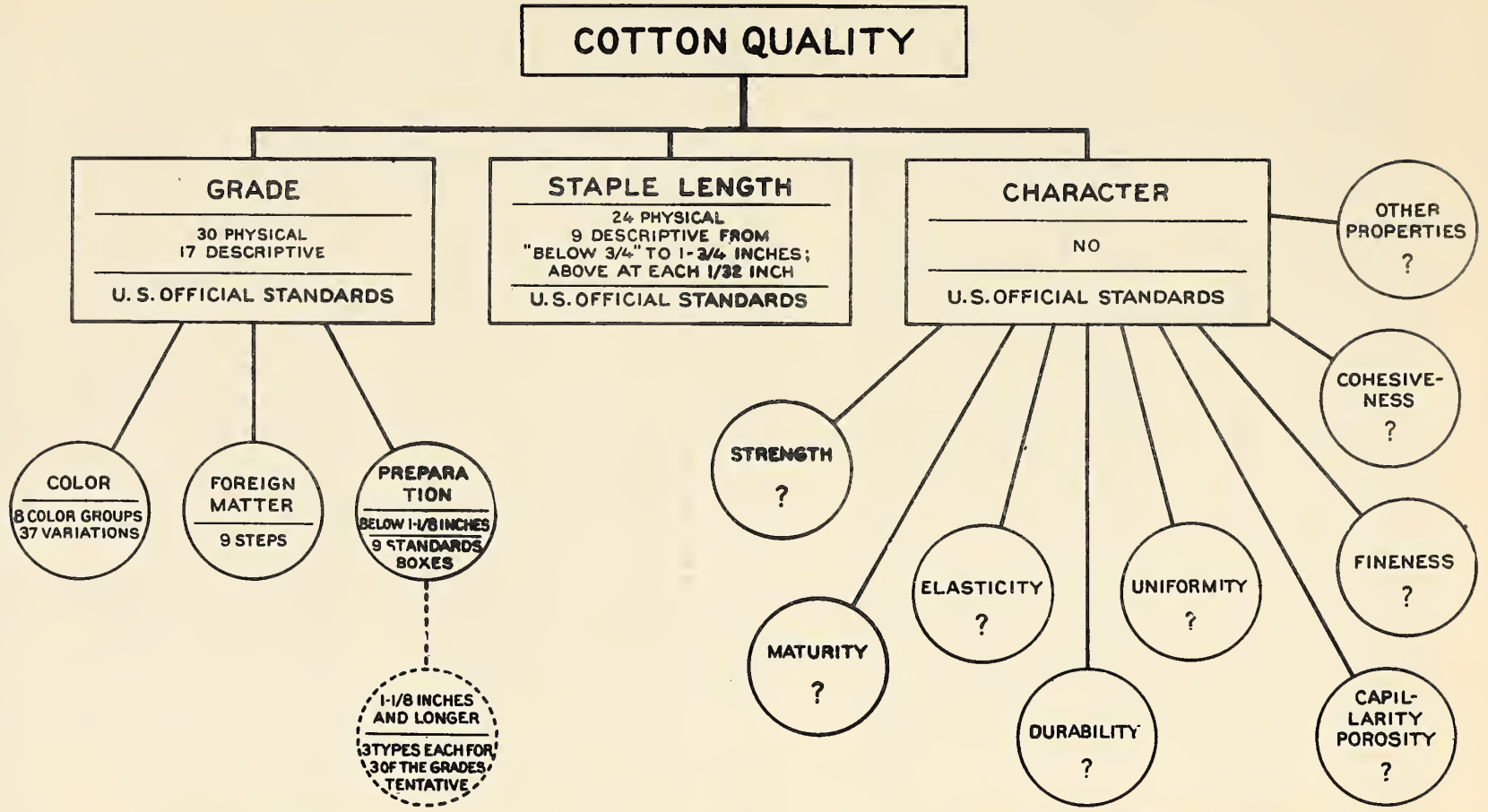

Figure 2.--Status of cotton quality standards.

cooperation with the Bureau of Agricultural Engineering and the Delta Branch Experiment Station of the Mississippi State College. Spinning studies are being conducted in cooperation with Clemson Agricultural College and Texas Agricultural and Mechanical College.

COTTON UTILIZATION, DEMAND, AND ADAPTATION TO NEW AND EXTENDED USES

The section of the Division dealing with cotton use in relation to adaptation of cotton to new and extended uses was established under an "Act Relating to Investigation of New Uses for Cotton", approved April 12, 1928. This act authorizes "technical and scientific research in American-grown cotton and its byproducts, and their present and potential uses." The Division has divided this work into two parts, namely, developmental work designed to create new and extended uses for cotton, and economic work relating to utilization of cotton and competitive fibers in the United States and in foreign countries. The purpose of this research is to provide information that will assist in adjusting cotton consumption and production by suggesting new uses, and by promoting increased consumption through present uses.

In 1927, the United States Department of Agriculture was given an appropriation for carrying on research in the interest of new and extended uses for cotton, and the United States Department of Commerce was given a like appropriation. These were the first sums ever appropriated for carrying on research for the purpose of finding new uses for cotton. The Cotton-Textile Institute, Inc., was organized about this time by cotton mills "to promote the progress and development of the cotton industry." A committee consisting of members from the Department of Agriculture, the Department of Commerce, and the Cotton-Textile Institute, Inc., met at intervals during the next 5 years to exchange ideas and coordinate the efforts of the three organizations. In 1933, the Department of Commerce discontinued its cotton research work. This left the new-and-extended-uses unit of the Division of Cotton Marketing responsible for all research of this nature sponsored by the Federal Government.

Economic research.-The work of the economic-research unit of this section of the Division includes the study and analysis of domestic and foreign mill consumption along with factors affecting the utilization of cotton in various countries. This economic information is supplied to farmers, merchants, manufacturers, and ultimate consumers of cotton goods, and should be valuable in helping them to adjust their supply of cotton to domestic and foreign requirements. These studies also provide information that is valuable in directing developmental work into promising channels. The results are made public through weekly news releases, the annual cotton outlook, periodic reports, and radio flashes.

One of the specific studies undertaken in connection with this work is designed to supply information relating to the quantities and qualities of various kinds of cotton and of competing materials consumed

for clothing, household, and industrial uses. The results of this study are intended to supply the basis for a more accurate appraisal of the requirements for cotton in various uses, and to provide basic information necessary for suggesting ways of increasing the consumption of cotton. The work in this field has been confined largely to the determination of the quantities of cotton consumed in clothing and household textiles, but considerable information is also available regarding the qualities of cotton used for specific purposes as, for example, work clothing, shirts, towels, and hosiery. This and other work already done has provided a basis for tentative classification of the uses of cotton in clothing, household, and industrial uses, and indicates that in the United States more than three-fifths of the total cotton consumed is ordinarily utilized in clothing and household articles. The basic data collected regarding the unit weights and raw-cotton content for many of these items have been put to practical use in the imposition of floor-stock taxes, in the collection of import duties, and in determining refunds on exports of cotton textiles under the Agricultural Adjustment Act.

Investigations have also been made to determine the quantities and qualities of cotton and competing materials used for various industrial purposes, such as bags and bagging, automobiles, and twine and cordage. It was found, for example, that of the total upland cotton consumed in automobile tires, about 76 percent ranged from 1 inch to 1-3/32 inches in staple length, and that approximately 82 percent was Middling in grade.

Competition of other materials with cotton has been given special attention. The principal objective of these competitive-fiber studies is to analyze trends in the consumption of competing fibers and other materials, and to provide information concerning the more outstanding factors that affect the substitution of these materials for cotton. More cotton is consumed in the United States annually than all other textiles combined. Jute is the outstanding competitor in industrial uses; and rayon, linen, and silk compete in certain clothing and household uses. Competition between cotton and wool, and hard fibers and cotton is not believed to be of very great importance.

Cotton prices, cost of manufacture, and consumer demand have also been studied to determine the wholesale and retail value of the quantities of various cotton textiles obtainable from a pound of raw cotton. Information regarding the influence of the price of raw cotton and of other manufacturing and merchandising costs upon the price of cotton textiles, and the effect of changes in price upon the consumption of cotton for specific uses, is the principal objective of these studies. The studies are significant because they indicate the extent to which costs other than those of raw cotton enter into the prices of finished goods and the degree to which cotton prices change with respect to cloth prices. These cloth prices have been useful in the administration of the Agricultural Adjustment Act.

Studies of specific uses have been made in the following fields:

1. Use of cotton bags and other types of containers in the flour-milling industry.
2. Use of cotton bags and filter cloths in the sugar industry.
3. Use of cotton bags and other containers in the wholesale-grocery trade.
4. Use of cotton-picking sacks, cotton-picking sheets, and tarpaulins on the cotton farms of the United States.
5. Use of cotton bags in the fertilizer industry.
6. Cotton bags and other forms in which cotton is used in power laundries in the United States.

Results from most of these studies have been published or are being prepared for publication.

An inquiry was conducted concerning cotton substitutes recently announced in Germany and Italy. Tests conducted on both the German and the Italian products show them to be merely rayon fibers cut in short lengths and spun into yarn. According to the Department's tests, yarns made from these fibers are not as strong as cotton yarn, and they are more expensive to make.

New uses developed.-The principal objective of the studies is to supply information regarding the design, treatment, and adaptability of cotton fabrics for specific uses in order to extend present uses and develop new uses for cotton, particularly in those fields where other investigations have indicated the economic possibilities of introducing new uses. The adaptation studies have been confined principally to the development of new fabrics for industrial and household uses to meet consumer needs, and the determination of treatments that will better adapt such fabrics to specific uses.

Cotton bagging materials, for covering cotton bales, have been developed, and have proved to be satisfactory from the standpoint of strength and durability, as indicated by compression, shipping, and laboratory tests. Cotton-patching material for cotton bales has also been developed. This material is light in weight, yet it affords protection to the cotton at a reasonably low cost.

A combination open-mesh and close-mesh fabric has been developed for making bags. These bags allow ventilation of the contents, and prevent loss resulting from picking over fruits and vegetables in retail stores. The contents of the bags can be plainly seen, yet the packer has plenty of space for his brand or advertising on the close-mesh section of the bag. These cotton bags will not lose strength when wet as will other materials commonly used for this purpose.

A cotton fabric suitable as a foundation for hooked rugs has been developed in cooperation with the North Carolina State College of Agriculture and Engineering and the Textile and Clothing Division of the

Bureau of Home Economics. This foundation can be washed without harm to the fabric.

A cotton fabric suitable for use in the construction of bituminous-surfaced roads has been developed in cooperation with the North Carolina State College and the Bureau of Public Roads. There are two objectives for developing a fabric of this kind, namely, to supply a material that will increase the durability of bituminous-surfaced roads, and to provide a use for cotton that may be expected to broaden the outlets for cotton. Experiments are now under way in which this new fabric is being thoroughly tested, and others are planned on a more extensive scale.

COTTONSEED AND COTTONSEED PRODUCTS

Within the last 50 years cottonseed has come to be, instead of a farm waste, a major source of income in the Cotton Belt. It is important, therefore, that producers be afforded the facilities essential to its effective marketing. Standard grades are essential in the orderly marketing of cottonseed, as is apparent from the fact that the oil content of different lots has been found to vary by more than 180 pounds, and cake of 41-percent protein content by more than 200 pounds per ton of seed, representing variations in value of more than 40 percent.

A chemical method has been devised for grading the composition of the seed. The work has been carried on in close cooperation with the oil, fat, and wax laboratory of the Bureau of Chemistry and Soils, and practically all commercial and private laboratories interested in the analysis of cottonseed have also cooperated.

Several factors affect the quality of seed from the crushers' standpoint, among which are free fatty acids in the oil in the seed; excess moisture; foreign matter; heating in storage or transit; fermentation; frosting of immature bolls; crushed, cracked, or huddled seed; and exposure to chemicals.

Sunlight has much to do with the composition of cottonseed. It will greatly increase the protein and carbohydrate content. Late July and August rains increase the oil and lower the carbohydrate content, particularly in the southwestern part of the Cotton Belt. Under irrigation, with plenty of moisture and sunshine, cottonseed contains a very small proportion of residual carbohydrates, but the oil and protein content is very high. Climatic conditions largely determine the quality of seed produced. The different varieties grown and the staple length of the lint also have a decided effect upon the composition of the seed.

Under the method of determining the grade set-up in the cottonseed standards, many combinations of the ingredients of cottonseed are possible that will result in the base grade of 100; but as a basis of comparison for oil millers to determine their price, this grade may be thought of

as having the following basic analysis: 18.5 percent oil; 3.5 percent ammonia; and not to exceed 1.8 percent free fatty acids in the oil in the seed, or 3 percent foreign matter, or 12 percent moisture. Under standard crushing efficiency a ton of seed having such an analysis will yield 313 pounds of oil, 822 pounds of meal (41.3 percent protein), 125 pounds of linters, and between 625 and 645 pounds of hulls, depending on the manufacturing and moisture loss during the processing. All these products would be of prime quality. The price of cottonseed of the basis grade, therefore, should have a direct relation to the sale value of these quantities of products minus the costs of assembling, processing, distribution, and profit. If a ton of seed grades higher than the basis, it should have enough premium added to cover the extra poundage of finished products that will result from the higher quality seeds.

Ideal seed would have the following qualities: Not more than 0.75 percent free fatty acids; not more than 8 to 10 percent moisture, (better 8 percent); not more than 0.50 percent foreign matter. This seed should bring a premium, as it has a basis index of 102.

Texas and Oklahoma are the chief cottonseed-producing States in which the standards are not used in buying seed. This may be explained by the fact that in Oklahoma oil mills control 90 percent of the gins, but the percentage is not so high for Texas. The seed produced in this area is of high quality, but it brings no premiums when sold to the local oil mills. The use of the standards in this section of the Cotton Belt would add thousands of dollars to farmers' incomes annually.

Seed from the delta area of Mississippi formerly brought more money than did seed from the hill section; but since the grading of seed was begun, the reverse is true. This is only one example of what can be accomplished through grading.

In 1931, when the grading work was started, 30 percent of the shipments of cottonseed contained excess dirt and trash. This situation has practically been eliminated. The quality of the seed has been improved, and the larger growers in Mississippi, Arkansas, Tennessee, and northern Louisiana have greatly increased the quality of their seed by better care. The moisture content has been greatly reduced along with the content of trash and other foreign matter.

The use of standards in buying and selling cottonseed would be worth almost as much to the farmer as is classification for his bale of cotton. The farmer who carefully handles his cottonseed and produces a higher quality of seed would thus get additional income in premiums for this extra care. The oil mills and the producers of low-quality seed are at present profiting, in many instances, at the expense of growers of better seed.

A strong educational program would at least set the farmers to thinking about this matter. A machine for rapid testing or grading would be necessary; but it is time for farmers to begin thinking in terms of

quality seed as in terms of quality lint. Cottonseed is becoming more important economically from year to year, and at some time in the future it may even become a source of greater profit than can be obtained from the lint.

COTTON LINTERS

An order establishing the proposed grades for American cotton linters as part of the official standards of the United States was issued by the Secretary of Agriculture on July 7, 1925. This order, establishing them immediately as tentative, also gave public notice that on August 1, 1926, they would become the official standard grades of the United States for American cotton linters.

These standards provide a scale on which average quality can be calculated from season to season, and which can be used to show the variations in quality for specified seasons. Quality in cotton linters depends upon four factors: Grade, color, character, and foreign matter. There are seven grades in the standards numbered from one to seven. The position of the sample in the box is also very important, because three different characters are represented in each box: Southeastern, Valley, and Western.

The oil mill producer of linters can control the grade of linters to some extent by setting the machinery so that it will give the grade desired.

Linters are used chiefly for mattress making. By far the majority of all mattresses are made from linters. Linters of higher grade make excellent mattresses, but those of lower grade are so trashy and short stapled that they become packed very hard after a short period of use.

Cotton linters are used extensively in making rayon. The fibers are high in cellulose content and therefore furnish a cheap supply of raw material for rayon manufacturing.

Large quantities of linters are used in making such commodities as absorbent cotton, surgical dressings, guncotton, wadding, felts, and many others in which a quality of cotton of blended long and short fibers is used.

The standards are of value to both the producer and consumer. The consumer knows the type and quality that he must have, and the producer must know this before he can produce what the consumer demands. The consumer can order a lot of grade six to use in the manufacture of rayon; and by using the standards the producer is able at once to either fill the order or set the machinery in his mill so that he will soon be able to supply the order.

The standards have also caused producers to turn out a much higher quality of linters. The demand for only the higher grades has caused the oil-mill operators to adjust their machinery for supplying only the grades that are in demand.

This Section is also issuing the Weekly Price Review of American cotton linters, which is a quotation report comparable to the one issued on the cotton market, and is valuable to the producers, and also is of considerable value to the consumers of linters and therefore to the general public.

COTTON PRICE STUDY

The preliminary work in the various cotton price studies was begun in 1927, and the actual work was started in 1928. European cotton merchants had been steadily complaining that the quality of cotton from certain sections was deteriorating, possibly because of the fact that farmers were not receiving premiums for producing quality cotton. A study was made of this situation to determine whether the complaints were justified.

Arrangements were made with the experiment stations in the cotton-producing States, and a project was organized to carry out the study. The relationship of prices received by the growers as reflected in the grades and staple lengths of the cotton sold by farmers was the chief study undertaken. Different markets were selected for the study, and these markets were scattered over the entire Cotton Belt to give the best possible cross section of the cotton markets.

The objects of this study were to supply specific information on the extent to which prices received by growers in local markets varied on the basis of the grade and staple length of the cotton sold; to call attention to the factors affecting variations in prices to growers on the basis of grade and staple length; to indicate the effect of these variations in prices on the quality of cotton produced and on the income to cotton growers; and to suggest means of bringing about improvements in the marketing of cotton.

The results show that prices received by growers in local markets varied irregularly upon the basis of the grade and staple length of individual bales. On the average, however, prices received for the higher grades and longer staples were somewhat higher than for the lower grades and shorter staples, but the average premiums and discounts to growers were considerably less than those quoted in central markets. Average prices to growers were generally somewhat higher in local markets where the cotton sold averaged higher in grade and longer in staple than in those in which the cotton sold averaged lower in grade and shorter in staple, adjustments being made for differences in transportation costs.

The failure of prices received by growers to reflect a larger proportion of differences in spinning value as reflected in central-market prices is largely due to lack of knowledge of the correct classification and commercial value of the cotton, to differences in the character of the cotton, to inadequate volumes of some of the grades and staple lengths, and to differences in bargaining power of farmers and of local buyers. It results in the production of larger proportions of the lower grades and shorter staples, and smaller proportions of the higher grades and longer staples than would be the case if production were better adjusted to mill demand as reflected in central market prices. As a consequence, the net income to growers as a group tends to be reduced.

Needed adjustments in cotton production can be brought about by: (1) Improving the marketing system, so that a greater proportion of the differences in spinning value of cotton of different grades and staple lengths will be reflected in the prices received by growers, thus furnishing an incentive to growers to adapt their production methods to quality production; (2) developing or improving varieties especially suited to conditions in specific localities; (3) giving farmers accurate information regarding the relative profitableness of producing cotton of different varieties in each locality; and (4) making readily available at reasonable cost to growers an adequate supply of good planting seed of the varieties of cotton relatively best adapted to conditions in each locality.

The present local marketing practices can be improved by: (1) Having disinterested, competent, and reliable persons classify the cotton according to a uniform standard and issue a certificate showing the grade, staple length, and character of each bale before it is sold by the growers; (2) supplying farmers with more adequate information on cotton prices in central markets and in nearby points of concentration, including prices for Middling 7/8-inch cotton, and premiums and discounts for the various other grades and staple lengths; and (3) encouraging the production of cotton of more uniform quality in each community, so that the volume of cotton of each grade and staple length produced in each community will be large enough to be handled more economically.

The Effects of Selling Cotton in the Seed on the Quality and Price of Cotton

In connection with local market price studies, as previously indicated, studies were made to determine the differences in the quality and prices of cotton sold as seed cotton from that custom ginned, as a basis for indicating the relative advantages and disadvantages to the cotton growers and to the cotton industry as a whole of these methods of selling cotton. Data were collected in Oklahoma, Missouri, Tennessee, and Arkansas over a period of years and analyzed. The results so far obtained indicate that returns to growers for cotton sold as seed cotton were somewhat higher on the average in some markets than for cotton custom ginned and sold in the same markets on the same days, and in other markets the reverse was indicated. Differences in returns to growers for cotton sold as seed cotton from those for cotton custom ginned are largely accounted for by

differences in percentage of lint to seed. These differences in percentage of lint to seed cotton were apparently but partially reflected in seed cotton prices so that in some of the markets studied farmers found an inducement to sell their low-turnout cotton as seed cotton and to have their high-turnout cotton custom ginned. The advantage of selling cotton as seed cotton most frequently referred to is that of convenience, whereas the disadvantage most frequently referred to is that the practice of selling cotton as seed cotton discourages quality improvement.

Spot Cotton Quotations and Quotation Making in Central Markets

The United States Cotton Futures Act requires, in effect, that in calculating prices for cotton of tenderable grades above or below Middling delivered in settlement of the contract obligation, commercial differences for grade in bona-fide spot markets shall be used. Ten markets are designated by the Secretary of Agriculture as bona-fide markets for use in this connection, and the quotations of prices of Middling 7/8-inch cotton and premiums and discounts for grade in these markets are under the supervision of the Department of Agriculture. In order to assure the accuracy of the quotations in these markets, studies were initiated to determine the volume and conditions under which cotton is sold in these markets, to develop methods of analyzing data on each kind of sale, and to determine the manner and extent of the use of these data in arriving at spot quotations.

Studies made so far have been confined to the New Orleans market, and the results indicate that in that market data on cotton sold on ex-warehouse terms supplied a better base for the quotation than data on cotton sold under any other terms and conditions. Data regarding sales on to-arrive terms with samples exhibited in New Orleans, limits used by merchants in New Orleans for purchases in the interior, and bids and offers for cotton on ex-warehouse terms were found to be useful to supplement the data on sales on ex-warehouse terms. These data, with certain adjustments, when used in combination, however, did not supply an adequate statistical base for quoting the price of Middling 7/8-inch cotton all the time or for quoting premiums and discounts for all the other grades and staples any of the time. Consequently, it was found necessary to make use of other information, such as futures prices, previous quotations, prices in other markets, and judgment of traders in the market in arriving at quotations for all qualities of cotton some of the time, and for arriving at quotations for some qualities of cotton most of the time.

It has been pointed out previously that quotations can be made less vulnerable to attack by increasing the amount of statistical data on actual sales available for use in making the quotations, and by basing the quotations insofar as possible on data on actual sales.

Futures Trading and Its Relation to Marketing and Prices of Spot Cotton

Investigations are being made to determine to what extent futures trading affords protection from changes in prices of spot cotton by

(1) reducing these changes, and (2) to shifting the risks from price changes through hedging transactions; and to indicate some of the effects of futures trading on prices to growers.

The results show that buying and selling of cotton futures contracts have not brought about that balance between present and future demand and supply conditions necessary to prevent rather wide fluctuations in cotton prices over relatively short periods of time. Despite any stabilizing influence that future trading may have, the changes in prices of spot cotton over relatively short periods are many times greater than the margins reported for merchandising the cotton. The fact that changes in prices of spot cotton are generally associated with more or less similar changes in prices of cotton futures contracts enables cotton merchants or manufacturers to obtain a considerable degree of protection against changes in spot prices by counterbalancing purchases or sales of futures contracts. On the average, during the period 1926-27 to 1934-35, inclusive, the cotton merchant or manufacturer could have shifted about three-fourths of the gains and losses from fluctuations in prices of Middling 7/8-inch spot cotton by counterbalancing purchases or sales of futures contracts. The extent of hedge protection varied considerably from time to time, and the yearly average varied from 58 percent in 1928-29 to 92 percent in 1932-33. Future trading reduces the costs in connection with merchandising cotton by increasing its collateral value and thus lowering the capital cost per bale, and by reducing the risks of loss from fluctuations in prices. These reductions in costs are counterbalanced to some extent by commissions and other charges in connection with future trading.

The study on the variations of price levels on different markets referring to the same grade and staple cottons has not been completed. The variations study should be of value in locating the most advantageous outlets for cotton of the various qualities produced in the different sections of the United States, and a stronger incentive for one-variety communities.

COTTON MARKET ORGANIZATION, MARKETING METHODS, AND COSTS

There are several very important points of concentration for the cotton crop of the South. The Texas ports of Houston, Galveston, and Texas City receive most of the Texas and Oklahoma cotton. Corpus Christi, another Texas port, receives cotton from the southern part of Texas. New Orleans receives a major portion of the Louisiana and Mississippi crop. Memphis receives most of the cotton from Arkansas, Tennessee, and northern Mississippi. Mobile receives cotton from Alabama and eastern Mississippi. Savannah and Charleston receive cotton from Georgia and South Carolina, respectively. Norfolk, Va., receives cotton from Virginia and the extreme northern parts of North Carolina.

Much of the cotton produced in the southeastern States moves directly into the mill centers for consumption. The cotton from the Texas ports

is largely exported; however, some of it is shipped to New England. The cotton from Memphis largely goes overland to southeastern mills, to New England, and to other northern consuming centers. The major portion of cotton concentrated at New Orleans and much of the cotton that is concentrated on the eastern seaboard is exported.

It is necessary to know the movements of this cotton, because the costs of handling might be considerably reduced by other methods. This information must be available before other methods can be worked out.

Cotton usually passes through many hands between the farmer and the spinner. It should move from the farmer to the spinner by as direct a route as possible. Cotton cooperatives have been handicapped in direct selling, because most mills buy through brokers. Some of the larger mills buy direct, and cooperatives also have been able to sell direct to some of the foreign buyers and to some local mills as well.

There are several different agencies that buy cotton from the producer. The local buyer has been one of the most popular, but in recent years with the rise in gin buying and increase in cooperatives the local buyer has lost much of his former prestige. This is also probably one of the most costly marketing methods. The local buyer usually pays little attention to quality. He buys the cotton just as cheaply as possible. High-quality or low-quality cotton makes very little difference. He usually sells all he has bought at the end of each day. He will sell to merchants or ship to commission men for later sales. Every man who handles the cotton must be paid for his services, and the farmer usually pays for most of such services.

The supply merchant and factors or commission merchants are found in the larger cotton markets. The commission merchants usually are found at the points of concentration.

Many large cotton firms have local representatives who buy cotton direct from the farmers. It is then shipped to some concentration point for reshipment to mills in the United States or for export. In recent years use of this method has been steadily increasing. It is a more direct method of marketing than through the local buyer or gin buyer. More attention usually is given to grade and staple, and premiums are paid for the better grades of cotton.

Many ginners during the last few years have become cotton buyers. They buy cotton at an average price based on the daily market report. Very few of them pay any attention to grade and staple. This method is similar to the plan of the local buyer. It is convenient for farmers to sell at the gin, but they often lose by so doing.

In many sections of the Cotton Belt, farmers have few marketing alternatives. This is true in parts of the western irrigated regions, and also in the poorer section of the Old South, where the merchant takes all the cotton and makes the deduction for supplies furnished the tenant.

Other sections have many alternatives which give them distinct marketing advantages.

Cooperatives have done more for the farmer than has any other marketing agency, by acting as a direct representative of growers and by forcing other marketing agencies, through competition, to reduce margins in handling cotton. The cooperatives have operated on a quality basis. Poor cotton naturally has brought the lower price. It has been hard for some farmers to understand just why this difference in price exists. Many farmers have adopted the practice of selling their low-grade cotton to the local buyer or ginner and shipping their high-grade cotton to the cooperatives. The cooperatives have done much for quality marketing, and no doubt many of the ills of cotton farming could be remedied if farmers would only use the cooperatives.

Growers are fooling themselves when they continue to think that they are selling the bagging and ties to the cotton buyers. Deductions for the weight of tare are made in all foreign markets. Buyers in this country make a corresponding allowance in their purchase price, even though no weight deductions are actually made. The price of cotton to the growers would actually be higher to the farmer if cotton were bought and sold on a net weight basis.

Foreign buyers deduct 27-1/2 pounds for tare on each 500 pounds of lint. The sellers put many patches on the bale to increase the weight. The freight on these patches actually amounts to more than one million dollars annually. This is another waste that the grower pays for. If cotton were sold on the net weight basis, this patching and other wastes would be eliminated. The method would, of course, require the standardization of bagging and ties as to weight and durability.

The present practices of bale identification are conducive to switching of bales, plating bales, and cotton stealing. It is very hard to trace down the origin of a plated or switched bale. Many complaints have been received from foreign buyers, who claim they have found steel, rocks, iron, seed, etc. inside the bales. Nothing can be done because the origin of the bale cannot be traced.

Positive identification would help the mills in buying cotton from a certain section. They could feel sure that the cotton would be that originally purchased. A fire-proof tag would help the insurance companies. In the case of large fires, at present the insurance people usually pay for much more cotton than was actually destroyed. Plated bales could be traced back to the original shipper if positive identification were possible.

The Division of Cotton Marketing has worked out a weatherproof, fireproof, and removal-proof marker. This marker has been tried under all conditions, and at the present time it is quite possible that it will come into general use in the near future. Extensive experiments in the use of this marker will begin next year.

Weights and qualities are probably as important to the spinner as are grade and staple. The moisture content of a bale may increase from 6 to 12 percent in a very short period. The spinner does not want to buy water for spinning purposes. Weighing is often very loosely done. Some weighers even allow for moisture content. Buyers often lower the price because of excessive moisture. This always happens to cotton that has been stored on the farm.

The ideal situation would be a standardized moisture content. If 8 percent were standard, 10 percent would take off 2 percent for excessive moisture, and 6 percent would add 2 percent to the price. Reweighing of bales is an enormous overhead cost. Possibly a bale is reweighed at least five times. These weighings easily cost 10 cents each. Only one weighing would be necessary if the moisture content were used as a basis for selling along with quality. Excess moisture means a deterioration in fiber and a lower price to the producer.

Beginning with the 1928-29 season, a survey has been made each year that covers the cost of ginning and bagging and ties. This survey has been made in practically every cotton-producing county in the South, and needless to say the costs varied in every State and in almost every county and community. The different methods of assessing ginning charges vary from a flat rate per bale, including bale wrapping, to a fixed charge per hundred pounds of lint or per hundred pounds of seed cotton with bale wrappings extra. In other areas much of the cotton is bought before it is ginned.

This survey has been difficult because of the wide variations for service charges. The overhead and merchandising costs are hardest to get. The Division is interested in reducing these costs and in getting more of the spinner's money back to the grower.

LIBRARY, DIVISION OF COTTON MARKETING

The library of the United States Department of Agriculture is the largest library in the Nation devoted specifically to agriculture and related sciences. It contains approximately 227,000 volumes, and 4,000 periodicals are received from agricultural and scientific institutions all over the world. The great strength of the library lies not in the size or value of its collections, but in the character of its catalogs, bibliographies, and records, which are preeminent in making available the literature of the subjects covered wherever it may be located.

This service has been extended to the Division of Cotton Marketing by the location of a branch of the Bureau of Agricultural Economics Library in the Division. Reference books and publications of the Division are kept on file. New books, newspapers, and periodicals on cotton and related subjects are circulated to persons interested. Approximately 300 periodicals and newspapers are received regularly for circulation in the

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Extension Studies and Teaching Section

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